AMENDMENTS TO THE CLAIMS

This listing of claims will replace all prior versions and listings of claims in the

application:

LISTING OF CLAIMS:

Claims 1-53 (canceled).

54. (currently amended):   An index structure for metadata divided into fragments,

~~comprising~~ the index structure contained in a computer readable storage medium and

comprising:

a list of keys corresponding to fields of the metadata, and

location information for defining a key and locating a fragment of the metadata, wherein

at least a part of the location information is expressed as a predetermined code, the

predetermined code being assigned to said at least a part of the location information according to

a convention for associating codes with portions of the metadata.

55. (previously presented):   The index structure as claimed in claim 54, wherein the

location information comprises location information of a fragment including the key, and

location information of the key within the fragment.

56. (previously presented):   The index structure as claimed in claim 55, wherein one of

the location information of the fragment and the location information of the key is expressed as

the predetermined code.

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57. (currently amended): The index structure as claimed in claim 56, wherein the predetermined code comprises ~~XPath as~~ additional information <u>in a language for addressing parts of a markup language document, wherein the location of one of the fragments and the key expressed as a predetermined code</u> ~~where the respective fragment/key~~ corresponds to a user defined type.

58. (currently amended): The index structure as claimed in claim 56, wherein ~~the other one of~~ <u>among</u> the location information of the fragment and the location information of the key<u>, the location information not expressed as the predetermined code</u> is expressed as another predetermined code or <u>in a language for addressing parts of a markup language document</u>~~XPath~~.

59. (previously presented): The index structure as claimed in claim 54, further comprising values of the key and identification information of the metadata corresponding to the values of the key.

60. (previously presented): The index structure as claimed in claim 54, further comprising:

a sub-section including ranges of values of the key and identification information on ones of the fragments of the metadata corresponding to the values of the key; and

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a section including representative key values representing the respective ranges of values

of the key.

61. (previously presented):   The index structure as claimed in claim 60, wherein:

the list includes identification information on the section, and

the section further includes identification information on the sub-section.

62. (previously presented):   The index structure as claimed in claim 60, wherein each of

the representative key values is a value among the corresponding range of values of the key.

63. (currently amended):   An index structure for metadata divided into fragments, the

index structure contained in a computer readable storage medium and comprising:

a key index list section comprising a list of keys corresponding to fields of the metadata,

and location information for defining the keys and locating fragments of the metadata, wherein at

least a part of the location information is expressed as a predetermined code, the predetermined

code being assigned to said at least a part of the location information according to a convention

for associating codes with portions of the metadata;

a key index section; and

a sub-key index section, wherein for a key of the key index list:

the sub-key index section comprises ranges of values of the key and identification

information on ones of the fragments of the metadata corresponding to the values of the key, and

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the key index section comprises representative key values representing the respective

ranges of values of the key.

64. (currently amended):   The index structure as claimed in claim 63, wherein the

location information comprises location information of a fragment including the keys, and

location information of the keys included within the fragment.

65. (previously presented):   The index structure as claimed in claim 63, further

comprising a corresponding key index section and a corresponding sub-key index section for

another key of the key index list.

66. (previously presented):   The index structure as claimed in claim 63, wherein:

the key index list section further comprises identification information on the key index

section, and

the key index section further comprises identification information on the sub-key index

section.

67. (currently amended):   An index structure for metadata divided into fragments, the

index structure contained in a computer readable storage medium and comprising:

a list of keys corresponding to fields of the metadata, and location information for

defining the keys, wherein at least a part of the location information is expressed as a

predetermined code, the predetermined code being assigned to said at least a part of the location

information according to a convention for associating codes with portions of the metadata; and

values of the keys and identification information ~~on~~ concerning the metadata

corresponding to the values of the keys for locating a fragment of the metadata.

68. (previously presented): The index structure as claimed in claim 67, wherein the

identification information comprises identification information on the fragments of the metadata

corresponding to the values of the keys.

69. (previously presented): The index structure as claimed in claim 67, wherein the

metadata has a structure of metadata as defined by the TV-Anytime Forum.

70. (currently amended): A computer readable storage medium containing a data

structure for storing an index for metadata divided into fragments, the index provided to search

the metadata, the data structure comprising,

a list of keys corresponding to fields of the metadata, and

location information for defining a key and locating a fragment of the metadata, wherein

at least a part of the location information is expressed as a predetermined code, the

predetermined code being assigned to said at least a part of the location information according to

a convention for associating codes with portions of the metadata.

71. (currently amended): A computer readable storage medium containing a data structure for storing an index for metadata divided into fragments, the index provided to search the metadata, the data structure comprising:

a key index list section comprising a list of keys corresponding to fields of the metadata, and location information for defining the keys and locating a fragment of the metadata, wherein at least a part of the location information is expressed as a predetermined code, the predetermined code being assigned to said at least a part of the location information according to a convention for associating codes with portions of the metadata;

a key index section; and

a sub-key index section, wherein for a key of the key index list:

the sub-key index section comprises ranges of values of the key and identification information on ones of the fragments of the metadata corresponding to the values of the key, and

the key index section comprises representative key values representing the respective ranges of values of the key.

72. (currently amended): A computer readable storage medium containing a data structure for storing an index for metadata divided into fragments, the index provided to search the metadata, the data structure comprising:

a list of keys corresponding to fields of the metadata, and location information for defining the keys, wherein at least a part of the location information is expressed as a

predetermined code, the predetermined code being assigned to said at least a part of the location

information according to a convention for associating codes with portions of the metadata; and

values of the keys and identification information on concerning the metadata

corresponding to the values of the keys for locating a fragment of the metadata.

73. (new):   The index structure of claim 54, wherein the location information to which

the predetermined code is assigned corresponds to a path from a root node in the metadata to a

metadata fragment containing the key.

74. (new):   The index structure of claim 73, wherein the location information is an

XPath expression.

75. (new):   The index structure of claim 63, wherein the location information to which

the predetermined code is assigned corresponds to a path from a root node in the metadata to a

metadata fragment containing the key.

76. (new):   The index structure of claim 75, wherein the location information is an

XPath expression.

77. (new):   The index structure of claim 67, wherein the location information to which

the predetermined code is assigned corresponds to a path from a root node in the metadata to a

metadata fragment containing the key.

78. (new):   The index structure of claim 77, wherein the location information is an

XPath expression.

79. (new):   The index structure of claim 70, wherein the location information to which the predetermined code is assigned corresponds to a path from a root node in the metadata to a metadata fragment containing the key.

80. (new):   The index structure of claim 79, wherein the location information is an XPath expression.

81. (new):   The index structure of claim 71, wherein the location information to which the predetermined code is assigned corresponds to a path from a root node in the metadata to a metadata fragment containing the key.

82. (new):   The index structure of claim 81, wherein the location information is an XPath expression.

83. (new):   The index structure of claim 72, wherein the location information to which the predetermined code is assigned corresponds to a path from a root node in the metadata to a metadata fragment containing the key.

84. (new):   The index structure of claim 83, wherein the location information is an XPath expression.

85. (new):   An index list structure for use in locating a fragment of metadata divided into a plurality of fragments, the metadata transmitted from a provider to a receiver, the index list structure contained in a computer readable storage medium and comprising:

a fragment type field containing an encoded value assigned to a standard fragment type

specifying a location of the fragment, wherein the encoded value is assigned to the standard

fragment type according to a convention for specifying standard fragment types;

a key descriptor field containing location information specifying a location of a key for

the index relative to the location of the fragment indicated by the fragment type field.

86. (new): The index list structure of claim 85, wherein the encoded value is assigned

to the predefined string prior to transmission of the metadata from the provider to the receiver.

87. (new): The index list structure of claim 86, wherein the predefined string

specifying a location of the fragment is a path from a root node in the metadata to a metadata

fragment containing the key.

88. (new): The index list structure of claim 87, wherein the predefined string

specifying a location of the fragment is an XPath expression.

89. (new): The index list structure as claimed in claim 88, wherein the metadata has a

structure of metadata as defined by the TV-Anytime Forum.